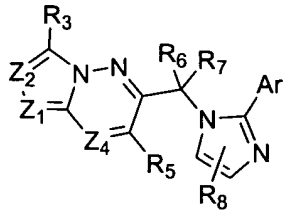
AMENDMENTS TO THE CLAIMS

1. (Original) A compound of the formula:



or a pharmaceutically acceptable salt thereof, wherein:

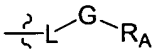
Z_1 is nitrogen or CR_1 and Z_2 is nitrogen or CR_2; such that at least one of Z_1 and Z_2 is nitrogen;

Z_4 is nitrogen or CR_4;

R_1, R_2, R_3 and R_4 are each independently selected from:

(a) hydrogen, halogen, nitro and cyano; and

(b) groups of the formula:



wherein:

L is a single covalent bond or C_1-C_8alkylene;

G is a single covalent bond, $N(R_B)$, O, C(=O), C(=O)O, $C(=O)N(R_B)$, $N(R_B)C(=O)$, $S(O)_m$, $CH_2C(=O)$, $S(O)_mN(R_B)$ or $N(R_B)S(O)_m$; wherein m is 0, 1 or 2; and

R_A and each R_B are independently selected from:

(i) hydrogen; and

(ii) C_1-C_8alkyl, C_2-C_8alkenyl, C_2-C_8alkynyl, (C_3-C_8cycloalkyl)C_0-C_4alkyl, (3- to 6-membered heterocycloalkyl)C_0-C_4alkyl, (aryl)C_0-C_2alkyl and (heteroaryl)C_0-C_2alkyl, each of which is substituted with from 0 to 4 substituents independently selected from halogen, hydroxy, nitro, cyano, amino, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4alkanoyl, mono- and di(C_1-C_4alkyl)amino, C_1-C_4haloalkyl and C_1-C_4haloalkoxy;

R_5 is hydrogen, halogen, cyano, C_1-C_6alkyl, C_2-C_6alkenyl, C_2-C_6alkynyl, C_1-C_4alkoxy, or mono- or di-(C_1-C_4alkyl)amino, each of which is substituted with from 0 to 5 substituents independently chosen from halogen, hydroxy, nitro, cyano, amino, C_1-C_4alkoxy, C_1-C_2haloalkyl, C_1-C_2haloalkoxy, mono- and di-C_1-C_4alkylamino, C_3-C_8cycloalkyl, phenyl, phenylC_1-C_4alkoxy and 5- or 6-membered heteroaryl;

R_6 and R_7 are independently hydrogen, methyl, ethyl or halogen;

R_8 represents 0, 1 or 2 substituents independently chosen from halogen, hydroxy, nitro, cyano, amino, C_1-C_4alkyl, C_1-C_4alkoxy, mono- and di(C_1-C_4alkyl)amino, C_3-C_7cycloalkyl, C_1-C_2haloalkyl and C_1-C_2haloalkoxy; and

Ar represents phenyl, naphthyl or a 5- to 10-membered heteroaryl, each of which is substituted with from 0 to 4 substituents independently chosen from halogen, hydroxy, nitro, cyano, amino, C_1-

C_8alkyl, C_1-C_8alkenyl, C_1-C_8alkynyl, C_1-C_8alkoxy, (C_3-C_7cycloalkyl)C_0-C_4alkyl, (C_3-C_7cycloalkyl)C_1-C_4alkoxy, C_2-C_8alkyl ether, C_3-C_8alkanone, C_1-C_8alkanoyl, 3- to 7-membered heterocycloalkyl, C_1-C_8haloalkyl, C_1-C_8haloalkoxy, oxo, C_1-C_8hydroxyalkyl, C_1-C_8aminoalkyl, and mono- and di-(C_1-C_8alkyl)aminoC_0-C_8alkyl.

2. (Original) A compound or salt according to claim 1, wherein R_8 represents 0 or 1 substituent selected from halogen, C_1-C_2alkyl and C_1-C_2alkoxy.

3. (Currently Amended) A compound or salt according to claim 1 ~~or claim 2~~, wherein Ar is substituted with 0, 1, 2 or 3 substituents independently selected from halogen, hydroxy, amino, cyano, C_1-C_4alkyl, C_1-C_4alkoxy, mono- or di-C_1-C_4alkylamino, C_2-C_4alkanoyl, (C_3-C_7cycloalkyl)C_0-C_2alkyl, C_1-C_2haloalkyl and C_1-C_2haloalkoxy.

4. (Currently Amended) A compound or salt according to claim 1 ~~or claim 2~~, wherein Ar represents phenyl, pyridyl, thiazolyl, thienyl, pyridazinyl or pyrimidinyl, each of which is substituted with from 0 to 4 substituents.

5. (Original) A compound or salt according to claim 4, wherein Ar represents phenyl, pyridyl, thiazolyl, thienyl or pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from chloro, fluoro, hydroxy, cyano, amino, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_2alkylamino, C_1-C_2haloalkyl and C_1-C_2haloalkoxy.

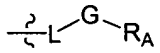
6. (Original) A compound or salt according to claim 5, wherein Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or pyridazin-3-yl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C_1-C_2alkyl, cyano and C_1-C_2alkoxy.

7. (Original) A compound or salt according to claim 5, wherein Ar represents 2,6-difluoro-phenyl, 2,5-difluoro-phenyl, 5-fluoro-2-methyl-phenyl, pyridine-2-yl, 3-fluoro-pyridin-2-yl, 3-cyano-pyridin-2yl, 3-trifluoromethyl-pyridin-2-yl, 3-hydroxy-pyridin-2-yl, 3-methoxy-pyridin-2-yl, 6-fluoro-pyridin-2-yl, 6-cyano-pyridin-2-yl, 6-trifluoromethyl-pyridin-2-yl, 6-hydroxy-pyridin-2-yl or 6-methoxy-pyridin-2-yl.

8. (Currently Amended) A compound or salt according to ~~any one of claims 1-7~~ claim 1, wherein R_1, R_2, R_3 and R_4 are independently selected from:

(a) hydrogen, halogen or cyano; and

(b) groups of the formula:



wherein:

(i) L is a single covalent bond;

(ii) G is a single covalent bond, -NH-, -N(R_B)-, -O-, -C(=O)O- or C(=O)-; and

(iii) R_A and R_B are independently selected from (1) hydrogen and (2) C_1-C_6alkyl, C_2-C_6alkenyl, (C_3-C_7cycloalkyl)C_0-C_2alkyl, phenyl, thienyl, pyridyl, pyrimidinyl, thiazolyl and pyrazinyl, each of which is substituted with from 0 to 4 substituents independently selected from hydroxy, halogen, cyano, amino, C_1-C_2alkyl and C_1-C_2alkoxy.

9. (Original) A compound or salt according to claim 8 wherein R_1, R_2, R_3 and R_4 are independently selected from hydrogen, hydroxy, halogen, cyano, aminocarbonyl, C_1-C_6alkyl, C_1-C_6alkoxy, C_2-C_6alkyl ether, C_3-C_7cycloalkyl, C_1-C_4hydroxyalkyl, C_1-C_2haloalkyl, C_1-C_2haloalkoxy, C_1-C_6alkoxycarbonyl, mono- and di-(C_1-C_4alkyl)amino, phenyl and pyridyl.

10. (Original) A compound or salt according to claim 9, wherein R_3 and R_4 are independently selected from hydrogen, methyl and ethyl.

11. (Currently Amended) A compound or salt according to ~~any one of claims 1-10,~~ claim 8 wherein Z_1 is nitrogen and Z_2 is CR_2.

12. (Original) A compound or salt according to claim 11, wherein R_2 is selected from hydrogen, cyano, aminocarbonyl, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4alkoxycarbonyl, C_2-C_4alkyl ether, C_3-C_7cycloalkyl, C_1-C_2hydroxyalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, phenyl and pyridyl.

13. (Currently Amended) A compound or salt according to ~~any one of claims 1-10,~~ claim 8, wherein Z_1 is CR_1 and Z_2 is nitrogen.

14. (Original) A compound or salt according to claim 13, wherein R_1 is selected from hydrogen, cyano, aminocarbonyl, C_1-C_4alkyl, C_1-C_4alkoxy, C_1-C_4alkoxycarbonyl, C_2-C_4alkyl ether, C_3-C_7cycloalkyl, C_1-C_2hydroxyalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, phenyl and pyridyl.

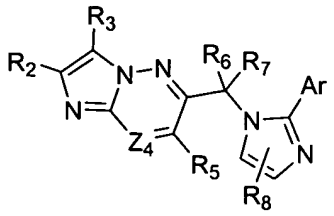
15. (Currently Amended) A compound or salt according to ~~any one of claims 1-10,~~ claim 8, wherein Z_1 and Z_2 are nitrogen.

16. (Currently Amended) A compound or salt according to ~~any one of claims 1-15,~~ claim 8, wherein R_6 and R_7 are both hydrogen.

17. (Currently Amended) A compound or salt according to ~~any one of claims 1-16,~~ claim 8 wherein R_5 is C_1-C_6alkyl, C_2-C_6 alkenyl, C_1-C_4 alkoxy, or mono- or di-C_1-C_4alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy, C_1-C_2alkoxy, C_3-C_8cycloalkyl, phenyl and phenylC_1-C_2alkoxy.

18. (Original) A compound or salt according to claim 17, wherein R_5 is ethyl, propyl, butyl, ethoxy or methoxymethyl.

19. (Original) A compound or salt according to claim 1, wherein the compound has the formula:



wherein:

R_2 is selected from hydrogen, hydroxy, halogen, cyano, aminocarbonyl, C_1-C_6alkyl, C_1-C_6alkoxy, C_3-C_7cycloalkyl, C_2-C_6alkyl ether, C_1-C_4hydroxyalkyl, C_1-C_2haloalkyl, C_1-C_2haloalkoxy, C_1-C_4alkoxycarbonyl, mono- and di-(C_1-C_4alkyl)amino, phenyl and pyridyl;

R_3 and R_4, if present, are independently hydrogen or C_1-C_4alkyl;

R_5 is C_1-C_6alkyl, C_2-C_6alkenyl, C_1-C_4alkoxy, or mono- or di-C_1-C_4alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy, C_1-C_2alkoxy, C_3-C_8cycloalkyl, phenyl and phenylC_1-C_2alkoxy;

R_6 and R_7 are independently hydrogen, methyl, ethyl or halogen;

R_8 represents 0 or 1 substituent selected from halogen, C_1-C_2alkyl and C_1-C_2alkoxy; and

Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or 3-pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C_1-C_2alkyl, C_1-C_2haloalkyl, cyano and C_1-C_2alkoxy.

20. (Original) A compound or salt according to claim 19, wherein:

R_2 is hydrogen, cyano, aminocarbonyl, C_1-C_6alkyl, C_1-C_6alkoxy, C_3-C_6cycloalkyl, C_2-C_6alkyl ether, C_1-C_4hydroxyalkyl, C_1-C_2haloalkyl or C_1-C_4alkoxycarbonyl;

Z_4 is CR_4;

R_3 and R_4 are independently hydrogen or C_1-C_2alkyl;

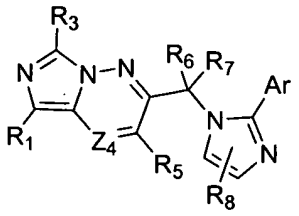
R_5 is C_1-C_6alkyl or C_2-C_6alkenyl, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy and C_1-C_2alkoxy;

R_6 and R_7 are hydrogen;

R_8 represents 0 substituents; and

Ar represents phenyl or 2-pyridyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, C_1-C_2alkyl, C_1-C_2haloalkyl, cyano and C_1-C_2alkoxy.

21. (Original) A compound or salt according to claim 1, wherein the compound has the formula:



wherein:

R_1 is selected from hydrogen, hydroxy, halogen, cyano, aminocarbonyl, C_1-C_6alkyl, C_1-C_6alkoxy, C_3-C_7cycloalkyl, C_2-C_6alkyl ether, C_1-C_4hydroxyalkyl, C_1-C_2haloalkyl, C_1-C_2haloalkoxy, C_1-C_4alkoxycarbonyl, mono- and di-(C_1-C_4alkyl)amino, phenyl and pyridyl;

R_3 and R_4, if present, are independently hydrogen or C_1-C_4alkyl;

R_5 is C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_4 alkoxy, or mono- or di-C_1-C_4alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy, C_1-C_2alkoxy, C_3-C_8cycloalkyl, phenyl and phenylC_1-C_2alkoxy;

R_6 and R_7 are independently hydrogen, methyl, ethyl or halogen;

R_8 represents 0 or 1 substituent selected from halogen, C_1-C_2alkyl and C_1-C_2alkoxy; and

Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or 3-pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C_1-C_2alkyl, C_1-C_2haloalkyl, cyano and C_1-C_2alkoxy.

22. (Original) A compound or salt according to claim 21, wherein:

R_1 is hydrogen, cyano, aminocarbonyl, C_1-C_6alkyl, C_1-C_6alkoxy, C_3-C_6cycloalkyl, C_2-C_6alkyl ether, C_1-C_4hydroxyalkyl, C_1-C_2haloalkyl or C_1-C_4alkoxycarbonyl;

Z_4 is CR_4;

R_3 and R_4 are independently hydrogen or C_1-C_2alkyl;

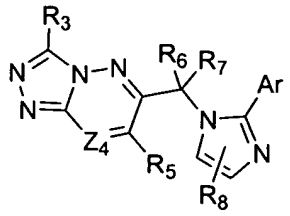
R_5 is C_1-C_6alkyl or C_2-C_6alkenyl, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy and C_1-C_2alkoxy;

R_6 and R_7 are hydrogen;

R_8 represents 0 substituents; and

Ar represents phenyl or 2-pyridyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, C_1-C_2alkyl, C_1-C_2haloalkyl, cyano and C_1-C_2alkoxy.

23. (Original) A compound or salt according to claim 1, wherein the compound has the formula:



wherein:

R_3 and R_4, if present, are independently hydrogen or C_1-C_4alkyl;

R_5 is C_1-C_6 alkyl, C_2-C_6 alkenyl, C_1-C_4 alkoxy, or mono- or di-C_1-C_4alkylamino, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy, C_1-C_2alkoxy, C_3-C_8cycloalkyl, phenyl and phenylC_1-C_2alkoxy;

R_6 and R_7 are independently hydrogen, methyl, ethyl or halogen;

R_8 represents 0 or 1 substituent selected from halogen, C_1-C_2alkyl and C_1-C_2alkoxy; and

Ar represents phenyl, 2-pyridyl, 1,3-thiazol-2-yl, 2-thienyl or 3-pyridazinyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, hydroxy, C_1-C_2alkyl, C_1-C_2haloalkyl, cyano and C_1-C_2alkoxy.

24. (Original) A compound or salt according to claim 23, wherein:

Z_4 is CR_4;

R_3 and R_4 are independently hydrogen or C_1-C_2alkyl;

R_5 is C_1-C_6alkyl or C_2-C_6alkenyl, each of which is substituted with from 0 to 2 substituents independently selected from halogen, hydroxy and C_1-C_2alkoxy;

R_6 and R_7 are hydrogen;

R_8 represents 0 substituents; and

Ar represents phenyl or 2-pyridyl, each of which is substituted with from 0 to 3 substituents independently selected from fluoro, chloro, C_1-C_2alkyl, C_1-C_2haloalkyl, cyano and C_1-C_2alkoxy.

25. (Currently Amended) A compound or salt according to ~~any one of claims 1-24~~claim 1, wherein the compound exhibits a K_i of 1 micromolar or less in an assay of $GABA_A$ receptor binding.

26. (Original) A compound or salt according to claim 25, wherein the compound exhibits a K_i of 100 nanomolar or less in an assay of $GABA_A$ receptor binding.

27. (Original) A compound or salt according to claim 26, wherein the compound exhibits a K_i of 10 nanomolar or less in an assay of $GABA_A$ receptor binding.

28. (Currently Amended) A pharmaceutical composition comprising a compound or salt according to ~~any one of claims 1-24~~ claim 1 in combination with a physiologically acceptable carrier or excipient.

29. (Original) A pharmaceutical composition according to claim 28, wherein the pharmaceutical composition is formulated as an injectible fluid, an aerosol, a cream, a gel, a pill, a capsule, a syrup or a transdermal patch.

30. (Currently Amended) A method for the treatment of anxiety, depression, or a sleep disorder, ~~attention-deficit-disorder or Alzheimer's dementia~~, comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound or salt according to ~~any one of claims 1-24~~ claim 1.

31 – 38. Cancelled.

39. (Currently Amended) A packaged pharmaceutical preparation comprising a pharmaceutical composition according to claim 28 in a container and instructions for using the composition to treat a patient suffering from anxiety, depression, a sleep disorder, ~~attention deficit disorder, Alzheimer's dementia~~ or short-term memory loss.

40. Cancelled.

41. (Currently Amended) A compound or salt of Claim 1, wherein the compound is 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine; 2-tert-butyl-6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine 2-ethyl-6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine 2-methyl-6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-2trifluoromethyl-imidazo[1,2-b]pyridazine 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine-2-carboxylic acid ethyl ester 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine-2-carboxylic acid amide; 6-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-7-propyl-imidazo[1,2-b]pyridazine-2-carbonitrile; 6-[2-(6-Fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-8-methyl-7-propyl-imidazo[1,2-b]pyridazine; 2-[2-(6-fluoro-pyridin-2-yl)-imidazol-1-ylmethyl]-5-methyl-3-propyl-imidazo[1,5-b]pyridazine; 7-ethyl-6-[2-(3-fluoro-phenyl)-imidazol-1-ylmethyl]-[1,2,4]triazolo[4,3-b] pyridazine; or 7-ethyl-6-[2-(3-fluoro-phenyl)-imidazol-1-ylmethyl]-3-methyl-[1,2,4]triazolo [4,3-b] pyridazine ~~or a pharmaceutically acceptable salt thereof~~.

42 – 52. Cancelled.